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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,288	08/06/2001	Hubert T. McGovern	OMG/129/US	9047

2543 7590 09/25/2002

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EXAMINER
SCHIFFMAN, JORI

ART UNIT	PAPER NUMBER
3679	

DATE MAILED: 09/25/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/923,288	Applicant(s) MCGOVERN ET AL.	
	Examiner Jori R. Schiffman	Art Unit 3679	

-- The MAILING DATE of this communication appears on th cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-119* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-119* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *06 August 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the buttress threads and #2 square opening must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 18, 19, 29, 41, 47, 54, 63, 74-79, 87-92, 100-105, and 113-118 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 18 and 19, they are dependent on claims 20 and 21, respectively. For examination purposes it will be assumed that they are both meant to depend on claim 12.

As to claims 19, 29, 41, 47, 54, 63, 74-79, 87-92, 100-105, and 113-118, a #2 square opening is not a recognized term in the art. An explanation is needed in the specification.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3-8, 11, 45, 48, 51, 52, 55, 58-60, 61, 64, and 67 are rejected under 35 U.S.C. 102(b) as being anticipated by Takasaki (US 6000892).

Regarding the claims, Takasaki discloses a screw shaft and head, the head provided with a top surface 2 being able to receive a tool, a bottom surface having a v-shaped undercut 7, the undercut having a conical surface that connects the lip with a conical side of the head, a crown that extends around the perimeter of the head and extends beyond the lower surface of the head thereby defining an open volume between the lower edge of the crown and the shaft of the screw and forming a recessed region between the lower edge of the crown and the shaft of the screw, the shaft provided with a threaded upper region 5 located proximate the head and a threaded lower region 4 near a distal end of the screw, the distal end having a tip 3, and the number of threads per unit length in the upper region exceeding the number of threads per unit length in the lower region. Takasaki further discloses the thread pattern of the lower region being

symmetrical, and the tip being a gimlet tip having an included angle from about 20° to about 30° (col. 2, l. 17-18). Takasaki also discloses the conical surface of the v-shaped undercut slanting away from the lip toward the axis of the shaft at an angle of approximately 45°.

6. Claims 1, 2, 9, 12, 13, 20, 23, 30, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Hsing (US 6045312).

Regarding the claims, Hsing discloses a screw shaft and head, the head provided with a top surface 72 being able to receive a tool, the shaft provided with a threaded upper region 120 located proximate the head and a threaded lower region 100 near a distal end of the screw, the distal end having a tip 30, the cross sectional area of the shaft in the upper region being greater than that of the shaft in the lower region, and the number of threads per unit length in the upper region being at least twice the number of threads per unit length in the lower region. Hsing further discloses the thread pattern of the lower region being symmetrical.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 10, 21, 31, 34, 35, 42, 43, 68, 80, 94, and 106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) as applied to claims 1, 12, and 23 above, and further in view of De Caro (US 4959938).

Hsing discloses the claimed screw as above, but fails to disclose the upper region having an inverted buttress thread configuration. De Caro teaches a screw having an upper region with an inverted buttress configuration to secure the screw into the surface. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Hsing's screw so the upper region had a buttress thread as disclosed in De Caro to better secure the screw into the surface so it is less likely to rotate, and therefore less likely to loosen.

9. Claims 50, 57, and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasaki (US 6000892) as applied to claims 45, 52, and 59 above, and further in view of De Caro (US 4959938).

Takasaki fails to disclose the upper region having an inverted buttress thread configuration. De Caro teaches a screw having an upper region with an inverted buttress configuration to secure the screw into the surface. It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Takasaki's screw so the upper region had a buttress thread as disclosed in De Caro to better secure the screw into the surface so it is less likely to rotate, and therefore less likely to loosen.

10. Claims 14-18, 22, 24-28 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) as applied to claims 1 and 23 above, and further in view of Takasaki (US 6000892).

Hsing fails to disclose a bottom surface having a v-shaped undercut, the undercut having a conical surface that connects the lip with a conical side of the head, a crown that extends around the perimeter of the head and extends beyond the lower surface of the head thereby defining an open volume between the lower edge of the crown and the shaft of the screw and forming a recessed region between the lower edge of the crown and the shaft of the screw. Hsing further fails to disclose the conical surface slanting away from the lip toward the shaft at approximately 45° and the tip having an angle from about 20° to 30°. Takasaki teaches all of these features of the head and the smaller tip angle in order to smoothly penetrate into the member and suppress bulging on the surface of a material molded from a mixture of plastic waste and wood chips (col. 2, l. 42-47 and col. 3, l. 15-17). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to add these features to the head and the tip of Hsing's screw as disclosed in Takasaki in order to suppress any bulging on the surface, keeping the surface smooth where the screw has been inserted.

11. Claims 46, 49, 53, 56, 62, 65 rejected under 35 U.S.C. 103(a) as being unpatentable over Takasaki (US 6000892) as applied to claims 45, 52, and 59 above, and further in view of Hsing (US 6045312).

Takasaki fails to disclose the upper region having twice as many threads per unit length than the lower region and the cross sectional area of the shaft in the upper region being greater than the lower region. Hsing discloses both of these features so less torque is required to install the screw (col. 4, l. 55-56).

12. Claims 19 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) as applied to claims 12 and 23 above, and further in view of Dreger (US 5020954).

Hsing fails to disclose the top surface of the head being provided with a #2 square opening. Dreger teaches a screw with a head having a #2 square opening for accommodating a #2 Robertson driver (col. 5, l. 35). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Hsing's screw by adding a #2 square opening to the head as disclosed in Dreger so it can be optimally installed or removed by a #2 Robertson driver as described in Dreger.

13. Claims 47, 54, and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takasaki (US 6000892) as applied to claims 45, 52, and 59 above, and further in view of Dreger (US 5020954).

Takasaki fails to disclose the top surface of the head being provided with a #2 square opening. Dreger teaches a screw with a head having a #2 square opening for accommodating a #2 Robertson driver (col. 5, l. 35). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Takasaki's

screw by adding a #2 square opening to the head as disclosed in Dreger so it can be optimally installed or removed by a #2 Robertson driver as described in Dreger.

14. Claims 36-40, 44, 69-73, 81-86, 93, 95-99, 107-112, and 119 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) and De Caro (US 4959938) as applied to claims 34, 68, and 94 above, and further in view of Takasaki (US 6000892).

Hsing modified by De Caro discloses the claimed screw as above, but fails to disclose a bottom surface having a v-shaped undercut, the undercut having a conical surface that connects the lip with a conical side of the head, a crown that extends around the perimeter of the head and extends beyond the lower surface of the head thereby defining an open volume between the lower edge of the crown and the shaft of the screw and forming a recessed region between the lower edge of the crown and the shaft of the screw. Hsing further fails to disclose the conical surface slanting away from the lip toward the shaft at approximately 45° and the tip having an angle from about 20° to 30°. Takasaki teaches all of these features of the head and the smaller tip angle in order to smoothly penetrate into the member and suppress bulging on the surface of a material molded from a mixture of plastic waste and wood chips (col. 2, l. 42-47 and col. 3, l. 15-17). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to add these features to the head and the tip of Hsing's screw as modified by De Caro as disclosed in Takasaki in order to suppress any bulging on the surface, keeping the surface smooth where the screw has been inserted.

15. Claims 41, 74, and 100 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312) and De Caro (US 4959938) as applied to claims 34, 68, and 94 above, and further in view of Dreger (US 5020954).

Hsing modified by De Caro discloses the claimed screw as above, but fails to disclose the top surface of the head being provided with a #2 square opening. Dreger teaches a screw with a head having a #2 square opening for accommodating a #2 Robertson driver (col. 5, l. 35). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Hsing's screw as modified by De Caro by adding a #2 square opening to the head as disclosed in Dreger so it can be optimally installed or removed by a #2 Robertson driver as described in Dreger.

16. Claims 75-79, 88-92, 101-104, and 114-117 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312), De Caro (US 4959938), and Takasaki (US 6000892) as applied to claims 34, 36-40, 68-73, 81-86, 93-99, and 107-112 above, and further in view of Dreger (US 5020954).

Hsing modified by De Caro and Takasaki discloses the claimed screw as above, but fails to disclose the top surface of the head being provided with a #2 square opening. Dreger teaches a screw with a head having a #2 square opening for accommodating a #2 Robertson driver (col. 5, l. 35). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to modify Hsing's screw as modified by De Caro and Takasaki by adding a #2 square opening to the head as disclosed in Dreger so it can be optimally installed or removed by a #2 Robertson driver as described in Dreger.

17. Claims 87, 105, 113, and 118 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsing (US 6045312), De Caro (US 4959938), and Dreger (US 5020954) as applied to claims 34, 41, 68, 74, 94 and 100 above, and further in view of Takasaki (US 6000892).

Hsing modified by De Caro and Dreger discloses the claimed screw as above, but fails to disclose the tip having an angle from about 20° to 30°. Takasaki teaches the smaller tip angle in order to smoothly penetrate into the member and suppress bulging on the surface of a material molded from a mixture of plastic waste and wood chips (col. 2, l. 42-47). It would have been obvious at the time the invention was made to a person of ordinary skill in the art to add these features to the head and the tip of Hsing's screw as modified by De Caro and Dreger as disclosed in Takasaki in order to suppress any bulging on the surface, keeping the surface smooth where the screw has been inserted.

Conclusion

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5863167 to Kaneko is cited further with particular interest to show the cross sectional area of the entire upper and lower sections of the shaft of the screw being different.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jori R. Schiffman whose telephone number is 703-305-4805. The examiner can normally be reached on M-Th, and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne Browne can be reached on 703-308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-3179.

Jori R. Schiffman
Examiner
Art Unit 3679

JS
September 20, 2002

Flemming Saether
Primary Examiner